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12/16/98



U.S. PTO

Express Mail No.EE406344521US

Attorney's Docket No. NC13803

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Box Patent Application  
Assistant Commissioner for Patents  
Washington, D.C. 20231

NEW APPLICATION TRANSMITTAL



U.S. PTO

09/212757

12/16/98

Transmitted herewith for filing is the patent application of

Inventor(s): Justin Beghtol and Kenneth Mar

*WARNING: Patent must be applied for in the name(s) of all of the actual inventor(s). 37 CFR 1.41(a) and 1.53(b).*

For (title): METHOD AND APPARATUS FOR INCOMING CALL  
REJECTION

CERTIFICATION UNDER 37 CFR 1.10

I hereby certify that this New Application Transmittal and the documents referred to as enclosed therein are being deposited with the United States Postal Service on this date, December 16, 1998, in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number EE406344521US, addressed to the: Assistant Commissioner for Patents, Washington, D.C. 20231.

Veronica E. Comeau  
(type or print name of person mailing paper)

*Veronica E. Comeau*  
Signature of person mailing paper

NOTE: Each paper or fee referred to as enclosed herein has the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 CFR 1.10(b).

*WARNING: Certificate of mailing (first class) or facsimile transmission procedures of 37 CFR 1.8 cannot be used to obtain a date of mailing or transmission for this correspondence.*

## 1. Type of Application

This new application is for a(n)

(check one applicable item below)

☒ Original (nonprovisional)

☐ Design

☐ Plant

**WARNING:** Do not use this transmittal for a completion in the U.S. of an International Application under 35 U.S.C. 371(c)(4), unless the International Application is being filed as a divisional, continuation or continuation-in-part application.

**WARNING:** Do not use this transmittal for the filing of a provisional application.

**NOTE:** If one of the following 3 items apply, then complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF A PRIOR U.S. APPLICATION CLAIMED** and a **NOTIFICATION IN PARENT APPLICATION OF THE FILING OF THIS CONTINUATION APPLICATION**.

☐ Divisional.

☐ Continuation.

☐ Continuation-in-part (C-I-P).

## 2. Benefit of Prior U.S. Application(s) (35 U.S.C. 119(e), 120, or 121)

**NOTE:** If the new application being transmitted is a divisional, continuation or a continuation-in-part of a parent case, or where the parent case is an International Application which designated the U.S., or benefit of a prior provisional application is claimed, then check the following item and complete and attach **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED**.

**WARNING:** If an application claims the benefit of the filing date of an earlier filed application under 35 U.S.C. 120, 121 or 365(c), the 20-year term of that application will be based upon the filing date of the earliest U.S. application that the application makes reference to under 35 U.S.C. 120, 121 or 365(c). [35 U.S.C. 154(a)(2) does not take into account, for the determination of the patent term, any application on which priority is claimed under 35 U.S.C. 119, 365(a) or 365(b).] For a c-i-p application, applicant should review whether any claim in the patent that will issue is supported by an earlier application and, if not, the applicant should consider canceling the reference to the earlier filed application. The term of a patent is not based on a claim-by-claim approach. See Notice of April 14, 1995, 60 Fed. Reg. 20,195, at 20,205.

**WARNING:** When the last day of pendency of a provisional application falls on a Saturday, Sunday, or Federal holiday within the District of Columbia, any nonprovisional application claiming benefit of the provisional application must be filed prior to the Saturday, Sunday, or Federal holiday within the District of Columbia. See 37 C.F.R. § 1.78(a)(3).

☒ The new application being transmitted claims the benefit of prior U.S. application(s). Enclosed are **ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED**.

## 3. Papers Enclosed That Are Required for Filing Date under 37 C.F.R. 1.53(b) (Regular) or 37 C.F.R. 1.153 (Design) Application

  20   Pages of specification

    6   Pages of claims

    1   Page of Abstract

    5   Sheets of drawing

☐ formal

☒ informal

**WARNING:** *DO NOT* submit original drawings. A high quality copy of the drawings should be supplied when filing a patent application. The drawings that are submitted to the Office must be on strong, white, smooth, and non-shiny paper and meet the standards according to § 1.84. If corrections to the drawings are necessary, they should be made to the original drawing and a high-quality copy of the corrected original drawing then submitted to the Office. Only one copy is required or desired. Comments on proposed new 37 CFR 1.84. Notice of March 9, 1988 (1990 O.G. 57-62).

**NOTE** "Identifying indicia, if provided, should include the application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application. This information should be placed on the back of each sheet of drawing a minimum distance of 1.5 cm (5/8 inch) down from the top of the page." 37 C.F.R. 1.84(c).

(complete the following, if applicable)

- ☐ The enclosed drawing(s) are photograph(s), and there is also attached a "PETITION TO ACCEPT PHOTOGRAPH(S) AS DRAWING(S)." 37 C.F.R. 1.84(b).

**4. Additional papers enclosed**

- ☐ Preliminary Amendment
- ☐ Information Disclosure Statement (37 C.F.R. 1.98)
- ☒ Form PTO-1449
- ☐ Citations
- ☐ Declaration of Biological Deposit
- ☐ Submission of "Sequence Listing," computer readable copy and/or amendment pertaining thereto for biotechnology invention containing nucleotide and/or amino acid sequence.
- ☐ Authorization of Attorney(s) to Accept and Follow Instructions from Representative
- ☐ Special Comments
- ☐ Other

**5. Declaration or oath**

- ☒ Enclosed
- Executed by

(check all applicable boxes)

- ☒ inventor(s).
- ☐ legal representative of inventor(s). 37 CFR 1.42 or 1.43.
- ☐ joint inventor or person showing a proprietary interest on behalf of inventor who refused to sign or cannot be reached.
- ☐ This is the petition required by 37 CFR 1.47 and the statement required by 37 CFR 1.47 is also attached. See item 13 below for fee.

- ☐ Not Enclosed.

**WARNING:** Where the filing is a completion in the U.S. of an International Application, but where a declaration is not available, or where the completion of the U.S. application contains subject matter in addition to the International Application, the application may be treated as a continuation or continuation-in-part, as the case may be, utilizing ADDED PAGE FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION CLAIMED.

- ☐ Application is made by a person authorized under 37 CFR 1.41(c) on behalf of **all** the above named inventor(s).

[The declaration or oath, along with the surcharge required by 37 CFR 1.16(e) can be filed subsequently.]

**NOTE:** It is important that all the correct inventor(s) are named for filing under 37 CFR 1.41(c) and 1.53(b).

- ☐ Showing that the filing is authorized.  
[not required unless called in question. 37 CFR 1.41(d)]

## 6. Inventorship Statement

**WARNING:** If the named inventors are each not the inventors of all the claims an explanation, including the ownership of the various claims at the time the last claimed invention was made, should be submitted.

The inventorship for all the claims in this application are:

- ☒ The same.

or

- ☐ Not the same. An explanation, including the ownership of the various claims at the time the last claimed invention was made,  
☐ is submitted.  
☐ will be submitted.

## 7. Language

**NOTE:** An application including a signed oath or declaration may be filed in a language other than English. A verified English translation of the non-English language application and the processing fee of \$130.00 required by 37 CFR 1.17(k) is required to be filed with the application, or within such time as may be set by the Office. 37 CFR 1.52(d).

**NOTE:** A non-English oath or declaration in the form provided or approved by the PTO need not be translated. 37 CFR 1.69(b).

- ☒ English  
☐ Non-English  
☐ The attached translation is a verified translation. 37 CFR 1.52(d).

## 8. Assignment

- ☒ An assignment of the invention to Nokia Mobile Phones Limited  
☒ is attached. A separate ☒ "COVER SHEET FOR ASSIGNMENT (DOCUMENT) ACCOMPANYING NEW PATENT APPLICATION" or ☐ FORM PTO 1595 is also attached.  
☐ will follow.

**NOTE:** "If an assignment is submitted with a new application, send two separate letters—one for the application and one for the assignment." Notice of May 4, 1990 (1114 O.G. 77-78).

**WARNING:** A newly executed "CERTIFICATE UNDER 37 CFR 3.73(b)" must be filed when a continuation-in-part application is filed by an assignee. Notice of April 30, 1993, 1150 O.G. 62-64.

## 9. Certified Copy

Certified copy(ies) of application(s)

Country	Appln. no.	Filed
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Country	Appln. no.	Filed
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Country	Appln. no.	Filed
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from which priority is claimed

☐ is (are) attached.

☐ will follow.

NOTE: The foreign application forming the basis for the claim for priority must be referred to in the oath or declaration. 37 CFR 1.55(a) and 1.63.

NOTE: This item is for any foreign priority for which the application being filed directly relates. If any parent U.S. application or International Application from which this application claims benefit under 35 U.S.C. 120 is itself entitled to priority from a prior foreign application, then complete item 18 on the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.

## 10. Fee Calculation (37 C.F.R. 1.16)

A. ☒ Regular application

CLAIMS AS FILED			
Number Filed	Number Extra	Rate	Basic Fee
			37 C.F.R. 1.16(a)
			\$760.00
Total Claims			
[37 CFR 1.16(c)] 15-20 = 0	0	x \$18.00	0
Independent Claims [37 CFR 1.16(b)]			
5-3 = 2	2	x \$78.00	156.00
Multiple dependent claim(s), if any			
[37 CFR 1.16(d)]	0	+ \$260.00	0

☐ Amendment cancelling extra claims is enclosed.

☐ Amendment deleting multiple-dependencies is enclosed.

☐ Fee for extra claims is not being paid at this time.

NOTE: If the fees for extra claims are not paid on filing they must be paid or the claims cancelled by amendment, prior to the expiration of the time period set for response by the Patent and Trademark Office in any notice of fee deficiency. 37 CFR 1.16(d).

Filing Fee Calculation

\$916.00

- B. ☐ Design application  
[\$310.00—37 CFR 1.16(f)]

Filing Fee Calculation \$

- C. ☐ Plant application  
[\$480.00—37 CFR 1.16(g)]

Filing Fee Calculation \$

**11. Small Entity Statement(s)**

- ☐ Verified Statement(s) that this is a filing by a small entity under 37 CFR 1.9 and 1.27 is (are) attached.

**WARNING:** \*Status as a small entity in one application or patent does not affect any other application or patent, including applications or patents which are directly or indirectly dependent upon the application or patent in which the status has been established. A nonprovisional application claiming benefit under 35 U.S.C. 119(e), 120, 121 or 365(c) of a prior application may rely on a verified statement filed in the prior application if the nonprovisional application includes a reference to a verified statement in the prior application or includes a copy of the verified statement filed in the prior application if status as a small entity is still proper and desired." 37 C.F.R. § 1.28(a).

(complete the following, if applicable)

- ☐ Status as a small entity was claimed in prior application.  
\_\_\_\_\_/\_\_\_\_\_, was filed on \_\_\_\_\_, from which  
benefit is being claimed for this application under:  
35 U.S.C. ☐ 119(e),  
☐ 120,  
☐ 121,  
☐ 365(c),  
and which status as a small entity is still proper and desired.

- ☐ A copy of the verified statement in the prior application is included. Filing  
Fee Calculation (50% of A, B or C above) \$\_\_\_\_\_

**NOTE:** Any excess of the full fee paid will be refunded if a verified statement and a refund request are filed within 2 months of the date of timely payment of a full fee. The two-month period is not extendible under § 1.136, 37 CFR 1.28(a).

**12. Request for International-Type Search [37 C.F.R. 1.104(d)]**

(complete, if applicable)

- ☐ Please prepare an international-type search report for this application at the time  
when national examination on the merits takes place.

### 13. Fee Payment Being Made at This Time

☐ Not Enclosed

☐ No filing fee is to be paid at this time.  
(This and the surcharge required by 37 C.F.R. 1.16(e) can be paid subsequently).

☒ Enclosed

☒ Filing fee \$916.00

☒ Recording assignment \_\_\_\_\_  
[\$40.00; 37 C.F.R. 1.21(h)]  
(See attached "COVER SHEET FOR ASSIGNMENT  
ACCOMPANYING NEW APPLICATION"). 40.00

☐ Petition fee for filing by other than all the inventors or  
person on behalf of the inventor where inventor refused  
to sign or cannot be reached \_\_\_\_\_  
[\$130.00; 37 C.F.R. 1.47 and 1.17(h)]

☐ For processing an application with a specification  
in a non-English language \_\_\_\_\_  
[\$130.00; 37 C.F.R. 1.52(d) and 1.17(k)]

☐ Processing and retention fee \_\_\_\_\_  
[\$130.00; 37 C.F.R. 1.53(d) and 1.21(l)]

☐ Fee for international-type search report \_\_\_\_\_  
[\$40.00; 37 C.F.R. 1.21(e)]

NOTE: 37 CFR 1.21(l) establishes a fee for processing and retaining any application that is abandoned for failing to complete the application pursuant to 37 CFR 1.53(d) and this, as well as the changes to 37 CFR 1.53 and 1.78, indicates that in order to obtain the benefit of a prior U.S. application, either the basic filing fee must be paid, or the processing and retention fee of § 1.21(l) must be paid, within 1 year from notification under § 53(d).

Total fees enclosed \$956.00

### 14. Method of Payment of Fees

☐ Check in the amount of \$ \_\_\_\_\_

☒ Charge Account No. 50-0270 in the amount of \$956.00

Two duplicates of this transmittal are attached.

NOTE: Fees should be itemized in such a manner that it is clear for which purpose the fees are paid. 37 CFR 1.22(b).

## 15. Authorization to Charge Additional Fees

**WARNING:** If no fees are to be paid on filing, the following items should not be completed.

**WARNING:** Accurately count claims, especially multiple dependent claims, to avoid unexpected high charges, if extra claim charges are authorized.

- ☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Account No.

50-0270.

☒ 37 C.F.R. 1.16(a), (f) or (g) (filing fees)

☒ 37 C.F.R. 1.16(b), (c) and (d) (presentation of extra claims)

**NOTE:** *Because additional fee for excess or multiple dependent claims not paid on filing or on later presentation must only be paid or these claims cancelled by amendment prior to the expiration of the time period set for response by the PTO in any notice of fee deficiency [37 CFR 1.16(d)], it might be best not to authorize the PTO to charge additional claim fees, except possibly when dealing with amendments after final action.*

☒ 37 C.F.R. 1.16(e) (surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application)

☒ 37 C.F.R. 1.17 (application processing fees)

**WARNING:** While 37 CFR 1.17(a), (b), (c) and (d) deal with extensions of time under § 1.136(a), this authorization should be made only with the knowledge that: "Submission of the appropriate extension fee under 37 C.F.R. 1.136(a) is to no avail unless a request or petition for extension is filed." (Emphasis added). Notice of November 5, 1985 (1060 O.G. 27).

☐ 37 C.F.R. 1.18 (issue fee at or before mailing of Notice of Allowance, pursuant to 37 C.F.R. 1.311(b))

**NOTE:** *Where an authorization to charge the issue fee to a deposit account has been filed before the mailing of a Notice of Allowance, the issue fee will be automatically charged to the deposit account at the time of mailing the notice of allowance. 37 CFR 1.311(b).*

**NOTE:** *37 CFR 1.28(b) requires "Notification of any change in loss of entitlement to small entity status must be filed in the application...prior to paying, or at the time of paying,...issue fee." From the wording of 37 CFR 1.28(b): (a) notification of change of status must be made even if the fee is paid as "other than a small entity" and (b) no notification is required if the change is to another small entity.*

## 16. Instructions as to Overpayment

☒ Credit Account No. 50-0270.

☐ Refund

Reg. No. 41,270

Tel. No. (972) 894-4959

  
\_\_\_\_\_  
Signature of Attorney

\_\_\_\_\_  
Brian T. Rivers  
(type or print name of attorney)

\_\_\_\_\_  
Nokia Inc.  
\_\_\_\_\_  
6000 Connection Drive  
(P.O. Address)

\_\_\_\_\_  
Irving, TX 75039



☒ **Incorporation by reference of added pages**

[check the following item if the application in this transmittal claims the benefit of prior U.S. application(s) (including an International Application entering the U.S. stage as a continuation, divisional or C-I-P application) and complete and attach the ADDED PAGES FOR NEW APPLICATION TRANSMITTAL WHERE BENEFIT OF PRIOR U.S. APPLICATION(S) CLAIMED.]

- ☒ Plus Added Pages for New Application Transmittal Where Benefit of Prior U.S. Application(s) Claimed

Number of pages added 1

- ☐ Plus Added Pages for Paper Referred to in Item 4 Above

Number of pages added \_\_\_\_\_

- ☐ Plus "Assignment Cover Letter Accompanying New Application"

Number of pages added \_\_\_\_\_

☐ **Statement Where No Further Pages Added**

(if no further pages form a part of this Transmittal, then end this transmittal with this page and check the following item)

- ☐ This transmittal ends with this page.

ADDED PAGE FOR APPLICATION TRANSMITTAL WHERE BENEFIT OF  
PRIOR U.S. APPLICATION(S) CLAIMED

**35 U.S.C. 119(e)**

This application claims the benefit of U.S. Provisional Application(s)  
No(s).:

**APPLICATION NO(S).**

**FILING DATE**

60/086,032

05/19/98

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## METHOD AND APPARATUS FOR INCOMING CALL REJECTION

### CLAIM OF PRIORITY FROM A COPENDING PROVISIONAL PATENT APPLICATION:

Priority is herewith claimed under 35 U.S.C. § 119(e) from copending  
5 Provisional Patent Application 60/086,032, filed 5/19/98, entitled "Incoming  
Call Rejection," by Justin Beghtol and Kenneth Mar. The disclosure of this  
Provisional Patent Application is incorporated by reference herein in its  
entirety.

### FIELD OF INVENTION

10 The present invention relates generally to call processing techniques in  
cellular telecommunications systems. More particularly, the present invention  
relates to apparatus, and associated method, for rejecting incoming calls to a  
mobile communications device within a cellular telecommunications system.

### BACKGROUND OF THE INVENTION

15 Wireless telecommunications systems provide a convenient way for users to  
communicate when landline phones are unavailable. What was once an  
expensive luxury is now an affordable convenience. By simply carrying a  
small, lightweight mobile communications device, users may place or receive  
calls of excellent quality in any geographic region offering such wireless  
20 service.

Typically, wireless telecommunications systems are made up of a series of  
base stations connected to landline telecommunications networks through the  
use of base station controllers. The base stations have the capacity to  
communicate with each other via the base station controllers and to establish  
25 a fixed number of radio frequency (RF) communications channels with remote  
mobile phones. The RF communications channels act as a conduit by which  
the mobile phones may ultimately communicate with landline phones. Thus,

as long as a mobile user remains within the geographic coverage area of the wireless system, communication with other mobile and landline users is possible.

To standardize the operation of wireless systems, several communication implementations have been developed. One such implementation, currently used in numerous wireless communication system deployments, is known as Code Division Multiple Access (CDMA). This communication technique is described under the TIA/EIA/IS-95-A standard (IS-95). Accordingly, the IS-95 standard is incorporated by reference in its entirety so as to provide the reader with adequate background information regarding mobile phone operation in an IS-95 telecommunications environment. As defined in the IS-95 standard, analog voice signals are converted to the digital domain, orthogonally encoded and then spread by a pseudo-random spreading signal so as to occupy a 1.23 MHz frequency band. From this spread signal, in-phase and quadrature phase signals are generated which are then combined and modulated onto RF carrier signals for transmission between remote mobile stations and fixed base stations.

Current wireless systems allow landline users to place and receive calls with mobile phone users. Additionally, mobile phone users can place and receive calls with other mobile phone users. Fixed base stations facilitate these calls by routing the calls between users and handling necessary overhead activities required to establish the RF communications channels used to conduct the calls.

Typically, when a landline user calls a mobile phone user, the base station acts as an intermediary by alerting the mobile of the attempted call via at least one RF channel. After alerting the mobile, the base station waits for a fixed time period, which defines a ringing cycle, to receive a response from the mobile. The response indicates the mobile is ready to accept the call. If the mobile does not respond within the ringing cycle time period, the base station releases the call by terminating the call alert to the mobile and signaling to the

caller that the mobile is unavailable. During the ringing cycle, the mobile phone produces an audible ringing or mechanical vibration to alert the mobile phone user of the incoming call. If the mobile phone user decides to answer the incoming call, a response is sent from the mobile to the base station  
5 indicating that the call is to be accepted. The base station then sets up a connection on the existing RF channel or establishes a second RF channel where the call will ultimately be connected.

Included in the call alert to the mobile phone may be identification information about the caller, sometimes referred to as caller ID. This identification  
10 information can be displayed by the mobile phone allowing the mobile phone user to determine who is calling before the call is answered. If the mobile phone user decides not to receive calls from specific callers, the identification information can be viewed, and if desired, the incoming call can be left unanswered for the entire ringing cycle.

15 One of the major benefits to users of mobile phones is the ability to place or receive calls without being restricted to a fixed location as when using a landline phone. So long as the mobile phone maintains an RF communication channel with at least one base station, communication services are generally available. This allows mobile users to send and  
20 receive calls when away from their home or office and even while traveling in automobiles.

However, having accessibility to instant communications may at times have undesirable consequences. In particular, unless the mobile phone is powered off, there may be no action a user may take to prevent the phone from  
25 proceeding through the entire ringing cycle. This means that for every unanswered incoming call, the phone will ring for the entire ringing cycle until the call is released by the base station. Even if the user is able to mute the audible ringing, the call is still processed by the phone until released, which may prevent the phone from handling other calls. There may also be times  
30 when a user desires to refuse all communications from certain callers. Such

times may occur when prank callers or telemarketers repeatedly call or when users simply do not want to receive calls originating from specific calling stations. Unfortunately, present systems do not allow mobile phones to refuse to accept calls nor do they provide mobile phone users with a rejection-on-demand capability to immediately reject any incoming call as desired.

Mobile phone systems have also adopted some of the features available in landline systems. For instance, a call-waiting feature may be implemented in a mobile phone system. During operation of call waiting, a user of a mobile phone may be connected and in active communication with a first caller when a second caller attempts a call to the same mobile phone. Instead of the second caller getting an immediate busy signal, a ringing cycle occurs where the mobile phone user receives a call alert indicating that there is an incoming call. The mobile phone user may then switch over to the second call and put the first call on hold, or may ignore the second call and continue on the first call. If the second call is not answered, the call alert to the mobile phone user will continue for a time period defining the ringing cycle. Unless the mobile phone user answers the second call, there is currently no way to terminate the call alert until the ringing cycle is complete.

There currently exists a need in the mobile communications industry for a method and apparatus wherein a user of a mobile phone has the capability to reject an incoming call. Such a method and apparatus should provide the user an automatic mode of rejection and a manual mode of rejection. The automatic mode should allow the user to preprogram the mobile phone with information descriptive of calling stations whose calls are to be rejected. When an incoming call from a pre-selected calling station is detected, the mobile phone should automatically reject the call. The preprogrammed information should include wild card characters, thereby allowing entire groups of calling stations to be rejected from a single entry. In the manual mode of operation, the method and apparatus should allow a user to

manually reject any incoming call as desired. Thus, the user can conveniently and effectively screen incoming calls, prevent undesirable audible ringing and minimize unnecessary utilization of the phone.

#### OBJECTS OF THE INVENTION

- 5 It is, therefore, an object of this invention to provide a method and apparatus for use in a mobile communications device that overcomes the foregoing and other problems.

Another object and advantage of this invention is to provide a method and apparatus allowing mobile phone users to selectively reject incoming calls,  
10 wherein the determination process is done at the mobile phone.

It is a further object and advantage of this invention to provide a method and apparatus for automatically rejecting an incoming call.

It is a further object and advantage of this invention to provide a method and apparatus for automatically rejecting incoming calls by utilizing wildcard  
15 characters to reject all calls having common identification information.

It is a further object and advantage of this invention to provide a method and apparatus for use in a mobile communications device for allowing a user manually to reject an incoming call.

It is a further object and advantage of this invention to provide a method and  
20 apparatus to allow a second call to be rejected, either manually or automatically, while the user is actively involved in a first call.

#### BRIEF SUMMARY OF THE INVENTION

The present invention provides a method and apparatus for rejecting calls to a mobile communications device. Incoming calls received by the mobile  
25 device may contain information that is descriptive of the origin of the call. Based on the descriptive information, automatic rejection can occur.

Additionally, a manual rejection feature is provided to allow the user to reject any call as desired.

In an embodiment of the invention, the mobile phone comprises an input actuator, a rejection memory and a message processor. The rejection  
5 memory contains information descriptive of calling stations whose calls are to be rejected. In the automatic mode, identification information associated with an incoming call is compared with identification information stored in the rejection memory. A determination is made, and if the incoming call is to be rejected, the message processor automatically transmits a rejection message  
10 from the mobile station to the base station. In the manual mode, upon receipt of an incoming call, the user may immediately actuate the input actuator. This causes the message processor to immediately transmit the rejection message to the base station. Once the base station receives the rejection message, the call is released by the base station and the caller is notified of  
15 the unavailability of the mobile. The method and apparatus is especially suited to provide convenience to the mobile user by allowing unwanted calls to be easily rejected.

In these and other aspects, therefore, a method of selectably rejecting an incoming call to a mobile phone is provided. The mobile phone has a  
20 transceiver circuit for transmitting and receiving transmissions with a remote transceiver. An incoming transmission is selectively rejected in a process beginning when the incoming transmission from the remote transceiver is received by the mobile phone. A determination is made at the mobile phone whether the incoming transmission is to be rejected. If it is determined that  
25 the incoming transmission is to be rejected, a rejection message is transmitted to the remote transceiver, wherein the rejection message indicates to the remote transceiver that the incoming transmission is to be rejected.



## BRIEF DESCRIPTION OF THE DRAWINGS

The above set forth and other features of the invention are made more apparent in the ensuing Detailed Description of the Invention when read in conjunction with the attached drawings, wherein like reference numerals refer to like parts and in which:

FIGURE 1 depicts an apparatus constructed according to the teachings of the present invention;

FIGURE 2 depicts a flow diagram representing call processing according to the teachings of the present invention;

FIGURE 3a depicts a message as defined under the IS-95 standard known as Flash with Information Message;

FIGURE 3b depicts a Rejection Message for use according to the teachings of the present invention;

FIGURE 4 depicts a flow diagram representing call processing of an incoming call according to the teachings of the present invention, wherein the mobile communications device is currently processing an active call;

FIGURE 5 depicts an exemplary message sequence for rejecting a call according to the teachings of the present invention; and

FIGURE 6 depicts an exemplary message sequence for rejecting an incoming call according to the teachings of the present invention, wherein the mobile communications device, while currently processing an active call, may reject a subsequent incoming call.

## DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring to Figure 1, therein is depicted apparatus 100 for rejecting an incoming call according to an embodiment of the invention. Apparatus 100 comprises controller 102, rejection memory 104, determiner 106, message processor 108, display 110, keypad 112, call indicator 114, transmitter 116

and receiver 118. Transmitter 116 and receiver 118 are used to communicate with a base station over communication channel 124.

Transmitter 116 is capable of transmitting information from the mobile phone to the base station over access channel 120 and reverse traffic channel 121.

5 Receiver 118 is capable of receiving information transmitted from the base station to the mobile station over paging channel 122 and forward traffic channel 123. The combination of channels 120, 121, 122 and 123 comprise communication channel 124.

10 In a telecommunications system operating according to the TIA/EIA/IS-95-A standard, when a remote mobile station is powered on, a registration process occurs. The registration process comprises a series of messages sent between the base station and the remote mobile station over communication channel 124. Registration allows the mobile station to obtain system parameters from the base station regarding operation of the  
15 telecommunications system. Registration also allows the base station to determine which mobile stations are operating in the base station's geographic area. After the registration process is complete, the mobile station may enter a standby mode where it waits to process incoming and outgoing calls. The registration process is well known to those skilled in the  
20 art and is not relevant to the disclosed embodiment of the present invention. Therefore, the registration messaging sequence will not be discussed in detail. However, the reader may refer to the IS-95 standard for a complete description.

Referring again to Figure 1, rejection memory 104 is used to store information  
25 identifying callers whose calls are to be automatically rejected. The information in rejection memory 104 may reference individual callers, lists of callers or contain "wild card" characters referencing entire groups of callers. Partial entries may also be used wherein, for example, a few numbers are used, such as 234, to reject all calls from originating stations having at least  
30 the numbers 234 included in their complete numbers. Stored information

may also contain alphanumeric characters, such as the name of the calling party or other information used to identify the calling party or calling station. This capability allows the invention to operate more efficiently as more caller identification information becomes available for use. Information may be entered into the rejection memory through user inputs, such as inputs entered on a keypad 112. These inputs may be received by controller 102 and then input into rejection memory 104. Additionally, a computer interface such as a hardwired connection or an infrared (IR) link may be used to enter information into rejection memory 104. Information may also be downloaded to the mobile station from a network such as a wireless telecommunications network for entry into rejection memory 104. In this method of entry, rejection information is received at receiver 118, passed to message processor 108, sent to controller 102 and then entered into rejection memory 104.

Referring now to Figure 2, therein is depicted a call processing flow diagram 200 according to an embodiment of the present invention. Call flow diagram 200 illustrates how a call to a mobile station may be automatically or manually rejected. In the embodiment, the mobile station begins in the standby mode at block 202 where it waits to process calls. Entering the standby mode may occur, for example, after completion of the registration process described above. When in the standby mode, the user can enter information descriptive of calls to be automatically rejected into the rejection memory 104 as shown at block 204. The user can accomplish this through the use of keypad 112, wherein controller 102 receives user input from keypad 112 and stores the information into rejection memory 104.

After rejection information has been placed in the rejection memory, an indication of an incoming call may be received as shown at block 206. The incoming call indication is received at receiver 118 via communication channel 124. The incoming call indication may contain information about the origin of the call, such as the caller ID information described above. At block 208 a determination is made whether or not to automatically reject the

incoming call. The determination can be made when the information about the incoming call received at receiver 118 is sent to determiner 106 via message processor 108. In addition, information about calls to be rejected is received at determiner 106 from rejection memory 104. Determiner 106 then

5 determines if the call is to be rejected by utilizing one or more of the comparison techniques described above. If it is determined that the call is to be rejected, a rejection message is transmitted as shown at block 216 when determiner 106 informs message processor 108 to generate a rejection message and send it to transmitter 116 for transmission to the base station.

10 After receiving the rejection message, the base station releases the call from the mobile as shown at block 218. The release occurs when the base station sends a release message to the mobile phone over communication channel 124. Receiver 118 receives the release message and transfers it to message processor 108 and further to controller 102. After controller 102 receives the

15 release message, it responds by re-initializing the call process to return to block 202 where the phone enters the standby mode again. In the meantime, the base station may terminate the incoming call or transfer the call to a voice messaging system as shown at block 220.

If a determination is made at block 208 that the call is not to be automatically

20 rejected, a call alert is activated and the user is given the opportunity to manually reject the call at block 210. The call alert occurs when controller 102 displays the incoming call identification information on display 110 and activates the call indicator 114. Call indicator 114 is capable of generating rings, tones or other audible sounds, as well as mechanical vibration or other

25 physical indications detectable by the mobile phone user. If the user decides to manually reject the call, the user indicates this to the phone by, for example, pressing a button on keypad 112, or some other available input actuator, thereby providing a user interaction as shown at block 214. A user interaction at keypad 112 is received at controller 102 which in turn directs

30 message processor 108 to send the rejection message to transmitter 116 for

transmission to the base station. As before, when the base station receives the rejection message, the call will be released.

If the user does not want to manually reject the call at block 210, the call is processed normally as shown at block 212. This means the user has the option to answer the call or let it continue to ring. The user may answer the call by entering a user input on keypad 112, for example. If the user does not answer after a fixed period of time, for example, a ringing cycle, a time out will occur and the base station will release the call.

The rejection message is used to notify the base station that the mobile phone user would like to immediately reject the attempted incoming call. In a cellular system operating according to the IS-95 standard, a rejection message could be incorporated under IS-95 section 6.7.4, Reverse Traffic Channel Information Records. On the reverse traffic channel, information records may be included in a Flash with Information Message. Figure 3a depicts an information record type 300 known as a Feature Indicator, which could be used to provide the rejection message in a Flash with Information Message. Under the IS-95 standard, section 6.7.4.1 defines a Feature Indicator message. Referring to Figure 3b, therein is depicted message format 302 for the Feature Indicator, which can be used to indicate a rejection message to the base station. In this format, the first four bits may be used to signify call rejection by setting them to the value of "0000." The next four bits are reserved. The rejection message indicates to the base station that the mobile phone user desires to have the attempted incoming call immediately rejected. This is different from merely indicating to the base station that the mobile phone cannot receive the call because it is busy. By transmitting a rejection message to the base station, the base station can distinguish between a busy message and a rejection message and thereby process the call as appropriate for each situation. For instance, if the mobile phone indicates it is busy, the caller may hear a message indicating this and be given an opportunity to leave a voice message. If the mobile phone indicates

that the call is to be rejected as an undesired call, for example, the caller may be given no opportunity to leave a message and the call may be immediately terminated.

Referring to Figure 4, another embodiment of the invention is depicted by call processing flow graph 400. In this embodiment, the mobile phone user is connected to a current call when the incoming call is attempted. Block 402 functions identically to block 202 of Figure 2. At block 404, the mobile phone user is connected to a current call. The current call may become active when the phone goes through the stages of call process 200 to reach block 212. At block 212 the user decides to accept the incoming call which is then connected. While processing the connected call, an indication of an incoming call arrives as shown at block 406. The incoming call indication is received at receiver 118 via communication channel 124. The incoming call indication may contain identification information about the origin of the call, such as the caller ID information described above. At block 408 a determination is made whether or not to automatically reject the incoming call. The determination can be made when the information about the incoming call received at receiver 118 is sent to determiner 106 via message processor 108. In addition, information about calls to be rejected is received at determiner 106 from rejection memory 104. Determiner 106 then determines if the call is to be rejected by utilizing one or more of the comparison techniques described above. If a determination is made to reject the incoming call, no indication of the incoming call is given to the user as shown at block 410. Therefore, the user who is on the current call is undisturbed by the attempted incoming call. The mobile phone then automatically sends the rejection message to the base station as shown at block 412. Determiner 106 informs message processor 108 to generate a rejection message and send it to transmitter 116 for transmission to the base station. Alternatively, a user notification may be provided, via call indicator 114, indicating to the user an incoming call was attempted and automatically rejected. In response to receiving the rejection message, the base station releases the incoming call from the mobile phone

as shown at block 414, and then the call may be transferred to voice mail as shown at block 416 or simply terminated if desired.

If a determination is made not to reject the incoming call at block 408, the user is then provided an indication of the incoming call at block 418. This indication may be a short beeping in the phone earpiece or other indication, such as a muted ring, to notify the user of the incoming call. The user may still decide to manually reject the incoming call at block 420, by providing some input to the phone at block 422. If this is done, the phone sends out the rejection message as shown at block 412. The base station then releases the call from the mobile phone as shown at block 414 and then may transfer the call to voice mail as shown at block 416.

If the user does not want to manually reject the call at block 420, the call can be accepted as shown at block 424. In this case the currently connected call may be placed in a hold state while the incoming call is connected. The user then has the option to switch between calls or to terminate one call and continue the other.

Referring now to Figure 5, therein is depicted messaging sequence 500 which can be used to implement an embodiment of the present invention as depicted in Figure 2. Messaging sequence 500 can be used in a telecommunications system operating in accordance with the IS-95 standard. It will be apparent to those skilled in the art that by substituting the corresponding protocol and processes, the disclosed call rejection invention may be similarly implemented using different message sequencing as found in other types of communications networks.

In the embodiment of Figure 2, functional blocks 206, 208, 210, 212, 214, 216, 218 and 220 require messages to be transmitted between the mobile phone and the base station to fulfill the specified tasks. These messages are sent via communication channel 124. The following description, which references Figures 2 and 5, defines the types of messages that are sent,

where they originate and what portion of communication channel 124 they are transmitted on.

Referring again to Figure 5, mobile station activities are shown at 501 and base station activities are shown at 502. The portion of communication  
5 channel 124 used for transmitting messages is shown at 503.

Incoming Call (block 206)

When a calling party attempts to call the mobile phone, an indication of the incoming call is received by the mobile phone as shown at block 206. This indication is accomplished through a series of messages indicated at 537  
10 between the base station and the mobile phone as can be seen in Figure 5. The base station acts as a conduit by which calls are routed to the mobile phone. When the base station receives a call whose intended destination is the remote mobile phone, a page message 504 is sent to the mobile phone via paging channel 122 as shown at 505. The page message alerts the  
15 mobile that a calling party is attempting a call to the mobile phone user. Upon receipt of the page message 504, the mobile responds by transmitting a page response message 506 over the access channel 120 as shown at 507. The page response message tells the base station that the mobile is available to receive the call. After the page response message 506 is received, the base  
20 station sets up a forward traffic channel 123 as shown at 508 where the call may be connected. The base station starts transmitting null data 509 on the newly established channel and then transmits a channel assignment message 510 over the paging channel 122 as shown at 511 to inform the mobile station about the assigned traffic channels where the call may be  
25 connected.

Once the mobile receives the channel assignment message 510, it sets up transmitter 116 and receiver 118 to use the assigned traffic channels as shown at 512 and prepares to communicate over the assigned channel by receiving a number (N) of consecutive valid information frames over the



assigned forward traffic channel 123 as shown at 513. The number of frames (N) is an operating parameter determined by the telecommunications system. Afterwards, the mobile begins sending a traffic channel preamble 514 to the base station over the assigned reverse traffic channel 121 as shown at 515.

5 The base station acquires the traffic channel preamble 516 and transmits an acknowledgment order 517 over the forward traffic channel 123 as shown at 518. When the mobile receives the acknowledgment order 517, it begins transmitting null traffic data 519 over the reverse traffic channel 121 as shown at 520. The base station continues the call setup process by sending a  
10 service option response order 521 over the forward traffic channel 123 as shown at 522. The service option response order is another operating parameter determined by the telecommunications system. The mobile station responds by processing the primary traffic channel in accordance with the service option selected at 523.

15 Once a traffic channel is established, the base station provides the mobile phone user information about the incoming call by sending an Alert with Information Message 524 over the forward traffic channel 123 as shown at 525. This message may contain caller ID information as described above and can be used by the mobile phone as an indication of an incoming call wherein  
20 the mobile phone may begin a ringing cycle if desired.

Phone sends Rejection Message (blocks 208, 216 and 220)

Upon receipt by the mobile phone of the Alert with Information Message 524, the mobile phone may not automatically start a ringing cycle. First, the mobile phone may determine if the incoming call should be automatically rejected.

25 The determination occurs when the mobile phone compares the caller ID information contained in the Information Message 524 to information stored in rejection memory 104 as shown at 526. If a match is detected, the mobile phone transmits a rejection message 527 to the base station over the reverse traffic channel 121 as shown at 528. The rejection message can be  
30 formatted as shown in Figures 3a and 3b, thereby indicating to the base

station that the attempted call is to be rejected. Upon receipt of the rejection message, the base station releases the call as shown at 529 and may transfer the caller to a voice messaging system as shown at block 220. If no match of the identification information is detected as shown at 530, the mobile  
5 phone may begin a ringing cycle to alert the mobile phone user of the incoming call by activating call indicator 114. During this time the caller ID information may also be displayed on mobile phone display 110.

Manual Rejection of the incoming call (blocks 210 and 214)

Once the user is alerted to the incoming call, indicating that automatic  
10 rejection did not occur, the incoming call can still be rejected if the user provides a manual rejection input as shown at blocks 210 and 214. The messaging sequence for manual rejection is shown in Figure 5. When the manual rejection input from the user is detected, the mobile phone transmits the rejection message 531 over the reverse traffic channel 121 as shown at  
15 532. When the message is received by the base station, the call will be released as shown at 533.

Connecting the call (block 212)

If the call is not automatically or manually rejected, it may be answered or, if desired, ignored. If the user wishes to answer the call, the user may provide  
20 an input to the mobile phone indicating that the call is to be answered. This action is shown at block 212 and results in the transmission by the phone of a connect message as shown at 534. A connect order 534 is transmitted to the base station over the reverse traffic channel 121 as shown at 535. When the base station receives this message, the incoming call is connected as shown  
25 at 536 to allow communication between the calling party and the mobile phone user. The process of connecting the call allows two-way communication between the mobile phone user and the calling party by utilizing the forward traffic channel 123 and the reverse traffic channel 121.

Referring now to Figure 6, therein is depicted messaging sequence 600 which can be used to implement an embodiment of the present invention as depicted in Figure 4. Messaging sequence 600 can be used in a telecommunications system operating in accordance with the IS-95 standard.

5 It will be apparent to those skilled in the art that by substituting the corresponding protocol and processes, the disclosed call rejection invention may be similarly implemented using different message sequencing as found in other types of communications networks.

10 In the embodiment of Figure 4, functional blocks 404, 408, 412, 418, 420, 422 and 424 require messages to be transmitted between the mobile phone and the base station to fulfill the specified tasks. These messages are sent via communication channel 124. The following description, which references Figures 4 and 6, defines the types of messages that are sent, where they originate and what portion of communication channel 124 they are transmitted  
15 on.

Referring again to Figure 6, mobile station activities are shown at 601 and base station activities are shown at 602. The portion of communication channel 124 used for transmitting messages is shown at 603.

Mobile Phone on Current Call (block 404)

20 When a calling party attempts to call the mobile phone, call processing is dependent on the current state of the mobile phone. In the embodiment of the invention as depicted in Figure 4, the mobile phone is actively involved in a current conversation as shown at 404. The current conversation comprises information messages shown at 604 and 605, which are transmitted over the  
25 forward traffic channel 123 and the reverse traffic channel 121 as shown at 606.

Incoming call (block 406)

With the mobile phone actively involved in a first conversation as shown at block 404, an incoming call is received as shown at block 406. The incoming call is detected by the base station as shown at 607. The base station then  
5 sends an Alert with Information Message to the mobile phone as shown at 608. This message is sent over the forward traffic channel 123, as shown at 609, to alert the mobile there is an incoming call. The information message may contain caller ID information and can be used by the mobile phone to trigger an alert signal to notify the mobile phone user of the attempted  
10 incoming call if desired.

Phone sends Rejection Message (blocks 408, 410 and 412)

Upon receipt by the mobile phone of the Alert with Information Message 608, the mobile phone does not automatically alert the mobile phone user of the incoming call. First, the mobile phone may determine if the incoming call  
15 should be automatically rejected. The determination occurs when the mobile phone compares the caller ID information contained in the Information Message 608 to information stored in rejection memory 104 as shown in the call flow at 408 and in the message sequence at 610. If a match is detected, the mobile phone transmits a rejection message 611 to the base station over  
20 the reverse traffic channel 121 as shown at 612. The rejection message can be formatted as shown in Figures 3a and 3b, indicating to the base station that the attempted call is to be rejected. Upon receipt of the rejection message, the base station releases the call as shown at 613 and may transfer the caller to a voice messaging system as shown at block 416 or  
25 provide other call processing as desired.

Manual Rejection of the incoming call (blocks 418, 420 and 422)

If the mobile phone fails to detect a match of the identification information as shown at 614, the mobile phone may alert the mobile phone user of the incoming call by activating an audible call waiting tone or a muted ring as

shown at 418. During this time, the caller ID information may also be displayed to the mobile phone user on mobile phone display 110.

Once the mobile phone user is alerted of the incoming call, indicating that automatic rejection did not occur, a manual call rejection can be activated as shown at blocks 420 and 422. If the user decides to manually reject the call, a manual rejection input can be activated as shown in block 422. This manual rejection input is detected as shown at 615. When the manual rejection input is detected, the mobile phone transmits the rejection message 616 over the reverse traffic channel 121 as shown at 617. When the message is received by the base station, the call will be released as shown at 618.

Connecting the call (block 424)

If the incoming call is not automatically or manually rejected, the user has the option to answer the incoming call. This option is provided at block 424. In this case, the user provides input indicating the incoming call is to be connected. In effect, a call-waiting feature is activated where a first call is placed on hold while a second call is connected. The user input is detected at 619 and results in a flash with information message 620 being transmitted to the base station via the reverse traffic channel 121 as shown at 621. The format of this message will not be discussed in detail as it does not pertain to the present invention. However, this message should comply with the applicable standard for implementing the call-waiting feature. When the base station receives this message, as shown at 622, the speech path of the first party is muted which has the effect of placing the first party on hold. In the meantime, the second party is connected to the mobile phone user, thereby allowing two-way conversation to occur.

Although described in the context of particular embodiments, it will be realized that a number of modifications to these teachings may occur to one skilled in the art. For example, the invention could be readily incorporated into various

remote communication devices. Such devices may include, but are not limited to, roadside call boxes, portable computers having detachable cell phone adapters or Personal Assistants (PDA) with cellular link-up capabilities. Thus, while the invention has been particularly shown and described with  
5 respect to specific embodiments thereof, it will be understood by those skilled in the art that changes in form and shape may be made therein without departing from the scope and spirit of the invention.

CLAIMS

What is claimed is:

1           1.     A method of selectably rejecting an incoming call to a mobile  
2 phone, said mobile phone having a transceiver circuit for transmitting and  
3 receiving transmissions to and from a remote transceiver, said method  
4 comprising the steps of:

5           receiving at the mobile phone a transmission from the remote  
6 transceiver signifying that there is an incoming call;

7           determining at the mobile phone if said incoming call is to be rejected;  
8 and

9           transmitting from the mobile phone a rejection message to the remote  
10 transceiver, if a determination is made during said step of determining  
11 that said incoming call is to be rejected, said rejection message  
12 comprising at least one information element indicating that the call is to  
13 be rejected.

1           2.     The method of claim 1, wherein the mobile phone further  
2 comprises an actuator operable by a user for inputting a first input, said step  
3 of determining comprising the steps of:

4           notifying the user of said transmission; and

5           receiving a first input from the actuator, wherein reception of the first  
6 input indicates that said incoming call is to be rejected.

1           3.     The method of claim 1, wherein the mobile communications  
2 device includes a memory and said transmission includes a first parameter,  
3 said step of determining comprising the steps of:

4           storing a second parameter in the memory;

5 comparing at least a portion of the first parameter with said second  
6 parameter; and

7 determining whether at least a portion of the first parameter matches  
8 said second parameter, wherein if a match occurs, said incoming call  
9 is to be rejected.

1 4. The method of claim 3, wherein the step of transmitting further  
2 comprises the step of notifying the user of said incoming call to be rejected.

1 5. A method of rejecting an incoming call to a mobile phone, said  
2 mobile phone having a transceiver circuit for transmitting and receiving  
3 transmissions to and from a remote transceiver, said mobile phone in  
4 communication with a first calling station via the remote transceiver, said  
5 method comprising the steps of:

6 receiving at the mobile phone, a transmission from the remote  
7 transceiver signifying that there is an incoming call;

8 determining at the mobile phone if said incoming call is to be rejected;  
9 and

10 transmitting from the mobile phone a rejection message to the remote  
11 transceiver if a determination is made during said step of determining  
12 that said incoming call is to be rejected, said rejection message  
13 comprising at least one information element indicating that said  
14 incoming call is to be rejected.

1 6. The method of claim 5, wherein the mobile phone includes an  
2 actuator operable by a user for inputting a manual input to the mobile phone,  
3 said step of determining comprises the step of:

4 notifying the user of said incoming call; and

5 receiving a manual input from the actuator, wherein reception of said  
6 manual input indicates that said incoming call is to be rejected.



1           7.     The method of claim 5, wherein the mobile phone further  
2 comprises a memory and said transmission includes a first parameter, said  
3 operation of determining comprising the steps of:

4           storing a second parameter in the memory;

5           comparing at least a portion of the first parameter with said second  
6 parameter; and

7           determining whether at least a portion of the first parameter matches  
8 said second parameter, wherein if a match occurs, said incoming call  
9 is to be rejected.

1           8.     The method of claim 7, wherein the step of transmitting  
2 comprises the step of suppressing transmission of a rejection message to the  
3 remote transceiver if a determination is made during said step of determining  
4 that said incoming call is to be rejected.

1           9.     The method of claim 7, wherein the operation of transmitting  
2 further comprises notifying the user of said incoming call to be rejected.

1           10.    In a mobile communications device, apparatus for selectably  
2 rejecting an incoming call, said apparatus comprising:

3           a transceiver operable to send and receive transmissions to and from a  
4 remote transceiver, wherein said transceiver for receiving a  
5 transmission signifies that an incoming call is being attempted; and

6           a control processor coupled to said transceiver, said control processor  
7 for determining if said incoming call is to be rejected, and if it is, said  
8 control processor outputting a rejection message to said transceiver for  
9 transmission to said remote transceiver, wherein said rejection  
10 message comprises at least one information element indicating that  
11 said incoming call is to be rejected.

1           11.    The apparatus of claim 10, wherein said control processor  
2 comprises:

3           a user notification means;

4           an actuator for inputting a manual input from the user; and

5           a message processor coupled to said user notification means, said  
6 actuator and said transceiver, said message processor for detecting  
7 said transmission, wherein when said transmission is detected, said  
8 message processor activates said user notification means, wherein  
9 upon detecting a manual input from said actuator, said message  
10 processor outputs a rejection message to said transceiver for  
11 transmission to said remote transceiver.

1           12.    The apparatus of claim 10, wherein said transmission includes a  
2 first parameter, said control processor comprises:

3           a memory for storing a second parameter;

4           a determiner coupled to said memory and said transceiver, said  
5 determiner for comparing at least a portion of the first parameter with  
6 said second parameter, wherein if at least a portion of the first  
7 parameter matches said second parameter, said determiner outputs a  
8 rejection message to said transceiver for transmission to said remote  
9 transceiver.

1           13.    A method of selectably terminating a transmission transmitted  
2 from a base station, said base station having a transceiver circuit for  
3 transmitting and receiving transmissions to and from at least a first remote  
4 station and a second remote station, said method comprising the steps of:

5           receiving at the base station a first transmission from the first remote  
6 station;

7 transmitting from the base station a second transmission to the second  
8 remote station;  
9 receiving at the base station a third transmission from the second  
10 remote station, said third transmission having a parameter;  
11 detecting at the base station if said parameter has at least one  
12 information element indicating that said second transmission is to be  
13 terminated; and  
14 terminating at the base station said second transmission, if it is  
15 determined during said step of detecting that said second transmission  
16 is to be terminated.

17 14. The method of claim 13, wherein the base station further  
18 comprises a message controller, said operation of terminating further  
19 comprising the step of transferring control of said first transmission to the  
20 message controller if it is determined at said step of detecting that said  
21 second transmission is to be terminated.

1 15. A method for selectably rejecting a transmission in a cellular  
2 communications system, said cellular communications system having a base  
3 station capable of two-way communication over a radio frequency link with a  
4 remote station, said method comprising the steps of:

5 transmitting a first transmission from the base station to the remote  
6 station;

7 determining at the remote station if said first transmission is to be  
8 rejected;

9 transmitting a rejection message from the remote station to the base  
10 station if it is determined at said step of determining that said first  
11 transmission is to be rejected;

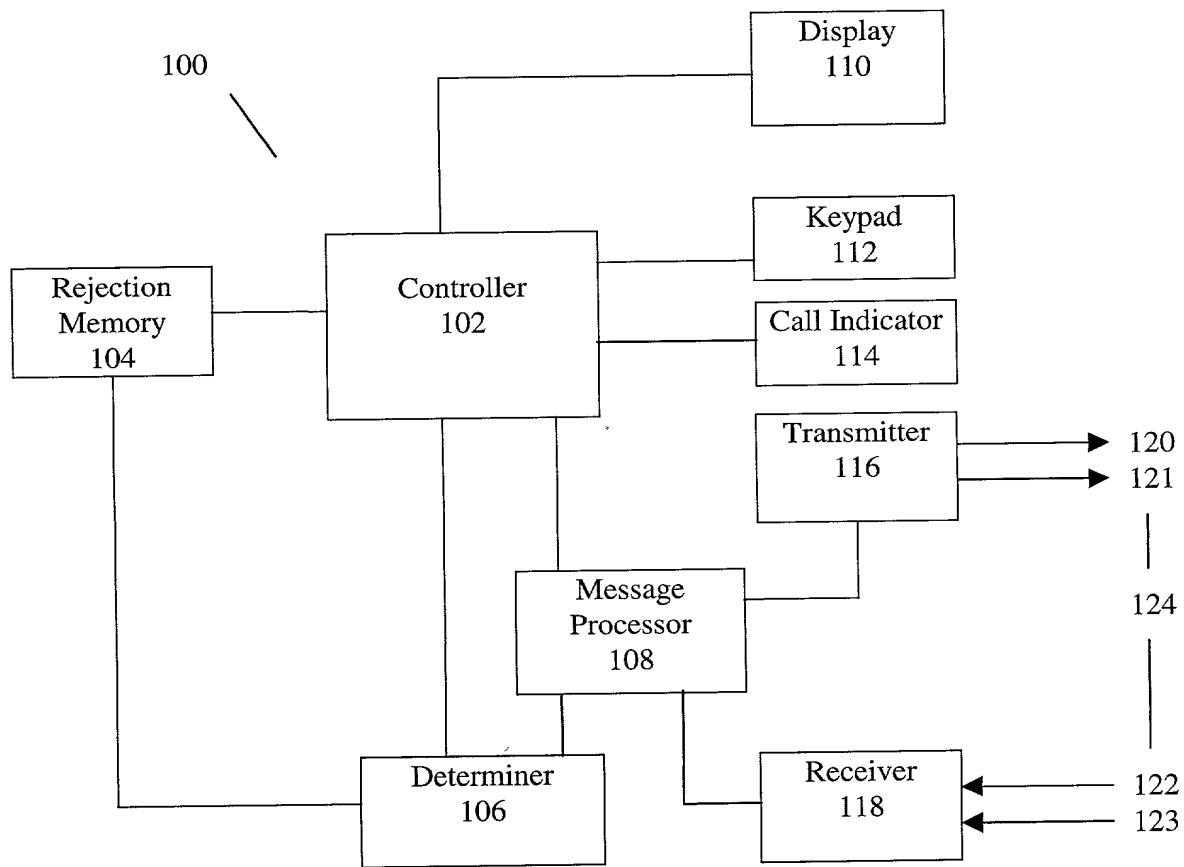
12 receiving said rejection message at the base station;

13 detecting whether said rejection messages has at least one information  
14 element indicating that said first transmission is to be terminated; and  
15 terminating at the base station said first transmission if it is determined  
16 at said step of detecting that said first transmission is to be terminated.

## METHOD AND APPARATUS FOR INCOMING CALL REJECTION

### ABSTRACT OF THE DISCLOSURE

A method and apparatus for rejecting incoming calls for use in a mobile communications device. The method and apparatus permit a user of a mobile communications device to automatically reject calls intended to be received by the device. In an exemplary embodiment, a rejection memory within the mobile device is preprogrammed with identification information representative of transmitting stations to be rejected. When a call is incoming, identification information included with the incoming call is compared with identification information contained in the rejection memory. When a match is detected, a rejection message is automatically sent by the mobile communications device to the transmitting station. Upon receipt of the rejection message, the transmitting station terminates the call and may reroute the call to a voice messaging system. Additionally, upon display of the identification information of an incoming call, the user may manually trigger the transmission of the rejection message from the mobile communications device.



**Figure 1.**

300

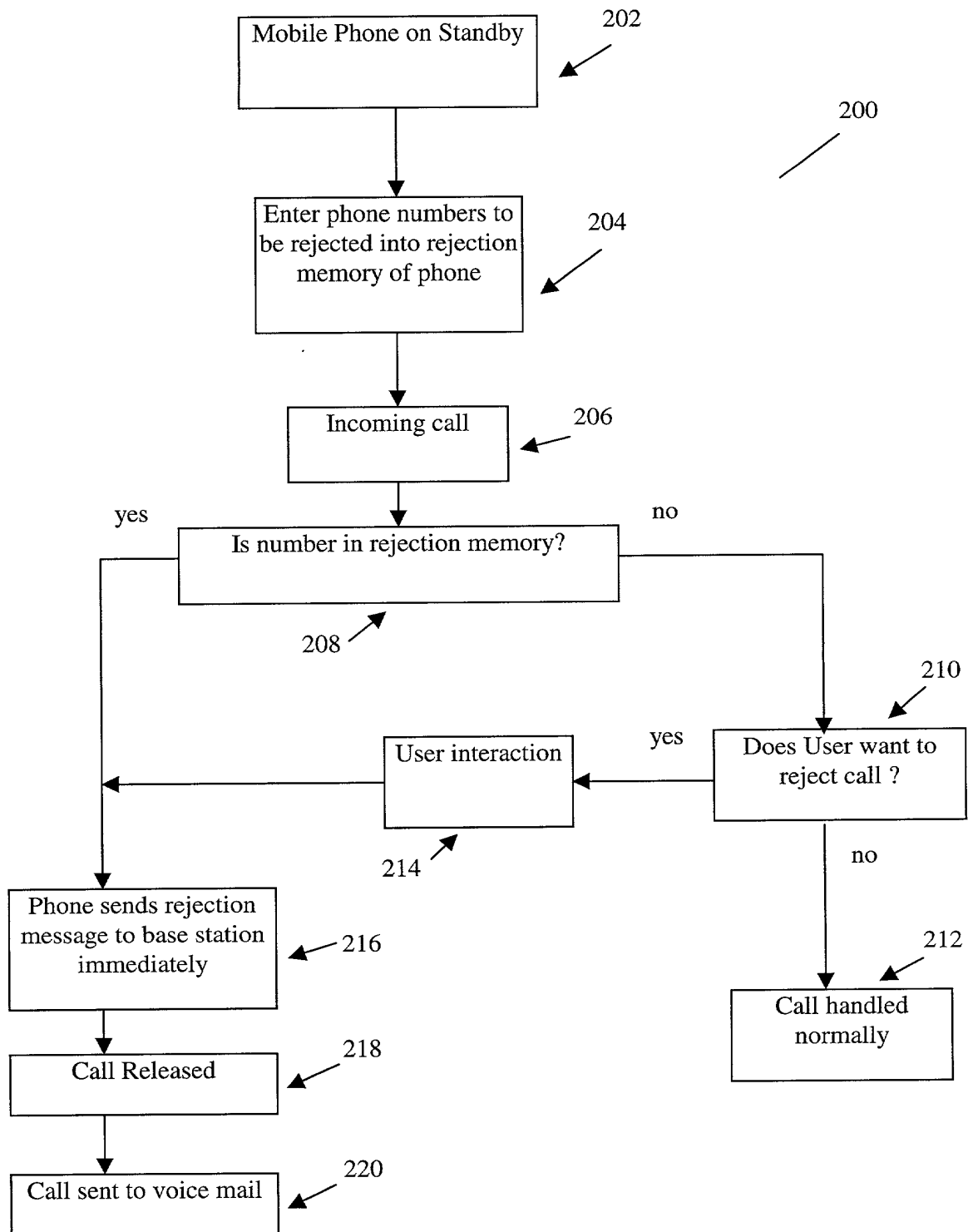
Message Type	Feature Description	Record Type (binary)
Flash with Information Message	Feature Indicator	00000010

**Figure 3a.**

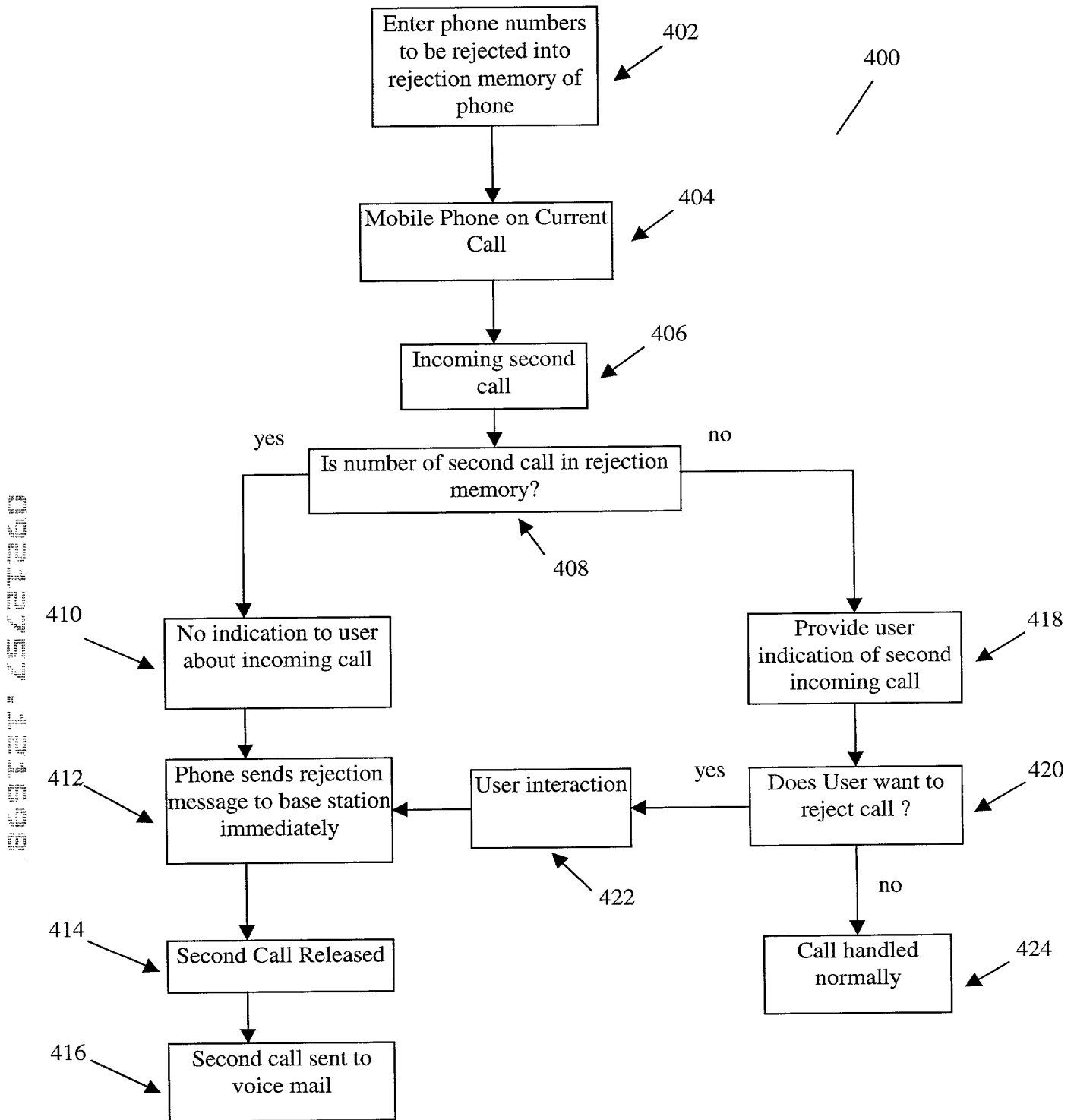
302

Type Specific Field	Feature Identifiers (bits)
Incoming Call Rejection	0000
Reserved	xxxx

**Figure 3b.**



**Figure 2.**



**Figure 4.**



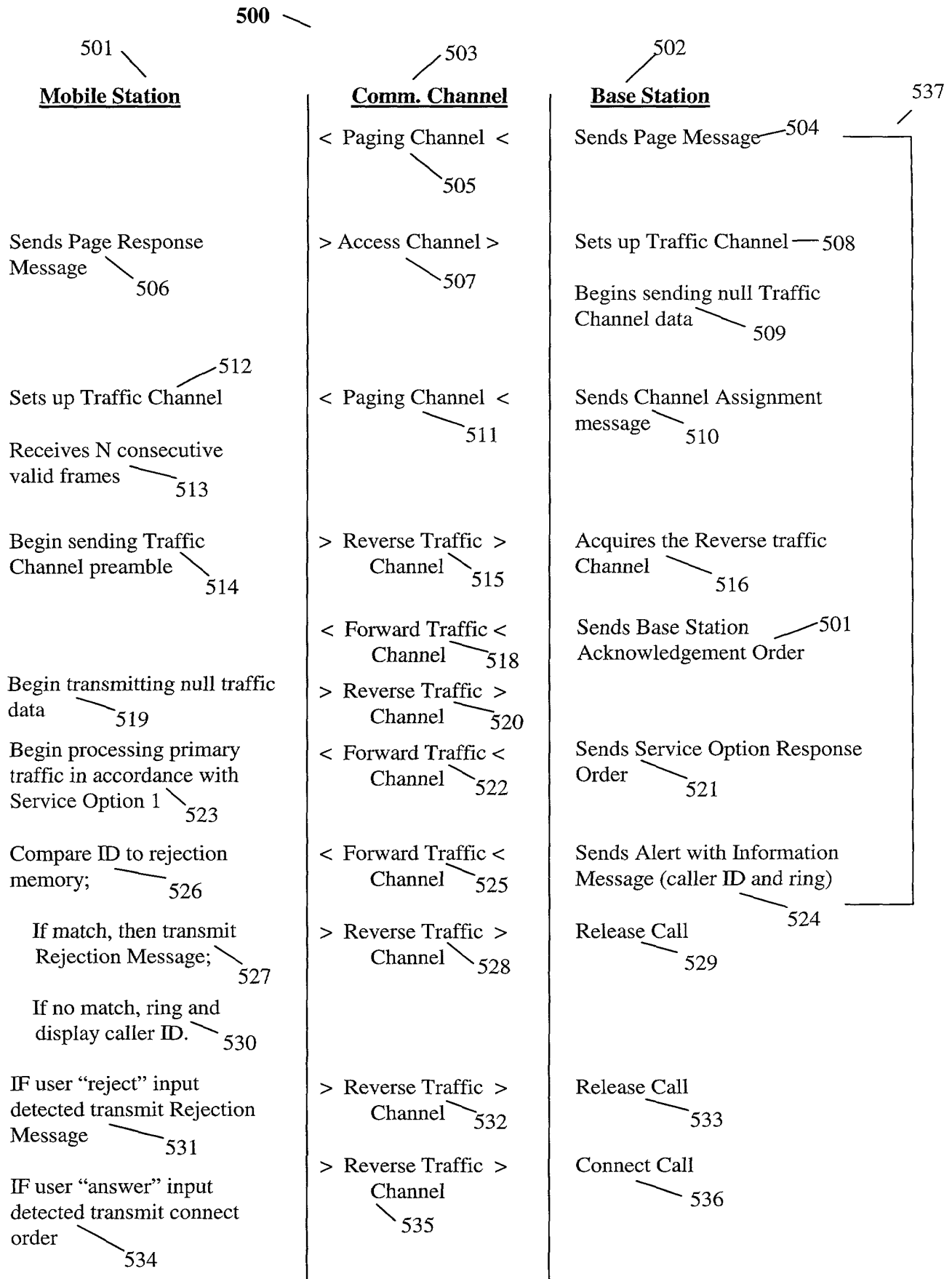
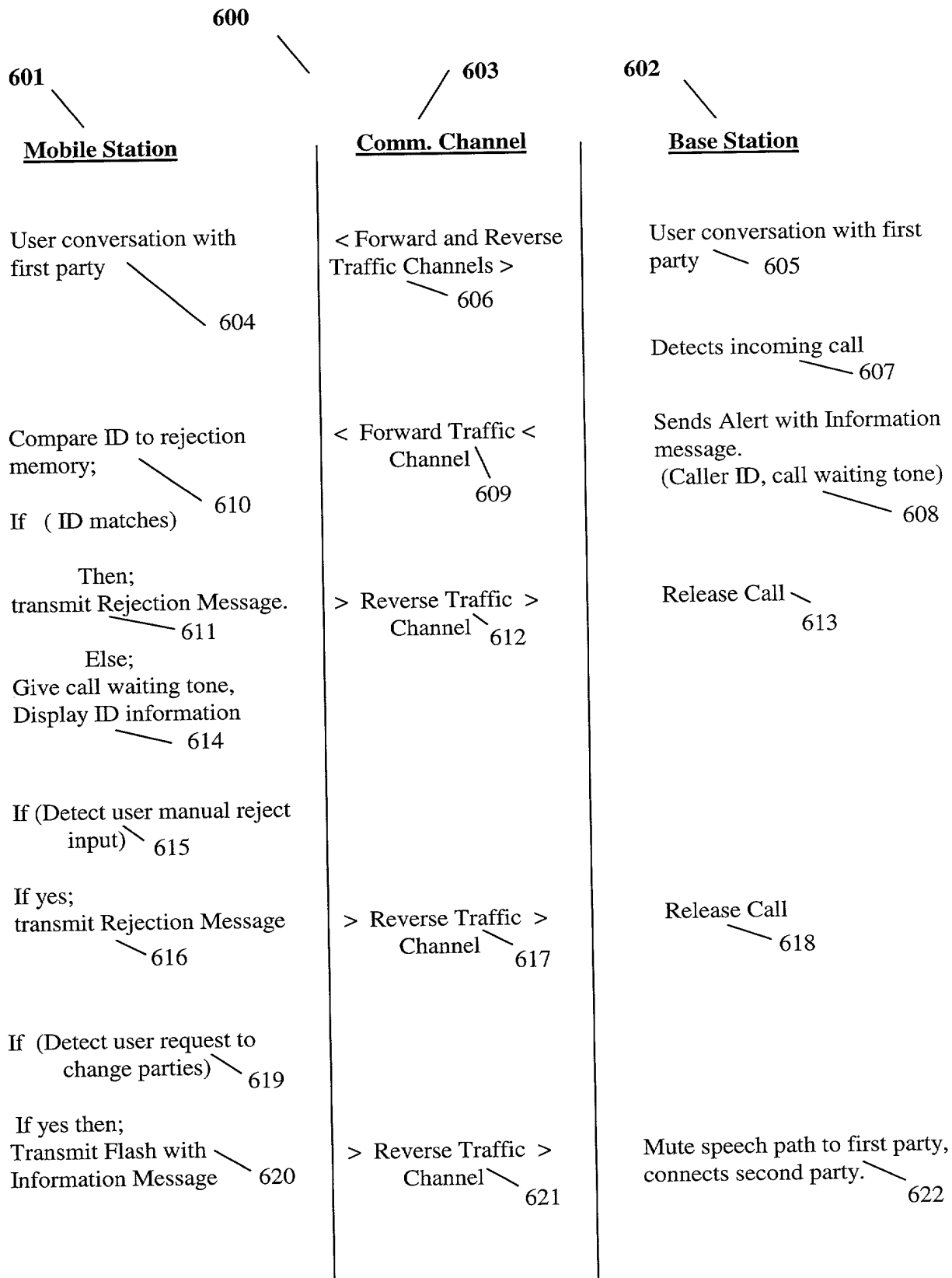


Figure 5.



**Figure 6.**

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CONTINUATION OR C-I-P)

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As a below named inventor, I hereby declare that:

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- ☐ divisional.  
☐ continuation.  
☐ continuation-in-part (C-I-P).

**INVENTORSHIP IDENTIFICATION**

**WARNING:** If the inventors are each not the inventors of all the claims, an explanation of the facts, including the ownership of all the claims at the time the last claimed invention was made, should be submitted.

My residence, post office address and citizenship are as stated below next to my name. I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

**TITLE OF INVENTION**

---

METHOD AND APPARATUS FOR INCOMING CALL REJECTION,

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## SPECIFICATION IDENTIFICATION

the specification of which: [complete (a), (b) or (c)]

- (a) ☒ is attached hereto.  
(b) ☐ was filed on \_\_\_\_\_ as ☐ Serial No. 0 \_\_\_\_\_/  
or ☐ Express Mail No., as Serial No. not yet known  
and was amended on \_\_\_\_\_ (if applicable).

NOTE: Amendments filed after the original papers are deposited with the PTO which contain new matter are not accorded a filing date by being referred to in the declaration. Accordingly, the amendments involved are those filed with the application papers or, in the case of a supplemental declaration, are those amendments claiming matter not encompassed in the original statement of invention or claims. See 37 CFR 1.67.

- (c) ☐ was described and claimed in PCT International Application No. \_\_\_\_\_ filed on \_\_\_\_\_ and  
as amended under PCT Article 19 on \_\_\_\_\_ (if any).

## ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56,

(check the following items, if desired)

- ☒ and which is material to the examination of this application, namely, information where there is a substantial likelihood that a reasonable Examiner would consider it important in deciding whether to allow the application to issue as a patent, and  
☒ in compliance with this duty, there is attached an information disclosure statement, in accordance with 37 CFR 1.98.

## PRIORITY CLAIM [35 U.S.C. § 119(a)–(d)]

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)–(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed.

[complete (d) or (e)]

- (d) ☒ no such applications have been filed.  
(e) ☐ such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. itself claimed priority check item (e), enter the details below and make the priority claim.

**PRIOR FOREIGN/PCT APPLICATION(S) FILED WITHIN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS APPLICATION  
AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. § 119(a)–(d)**

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 USC 119
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO
			<input type="checkbox"/> YES <input type="checkbox"/> NO

**CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)**  
[35 U.S.C. § 119(e)]

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

PROVISIONAL APPLICATION NUMBER

FILING DATE

60/086,032

05/19/98

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**CLAIM FOR BENEFIT OF EARLIER US/PCT APPLICATION(S)**  
**UNDER 35 U.S.C. 120**

- ☐ The claim for the benefit of any such applications is set forth in the attached  
ADDED PAGES TO COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR DIVISIONAL, CONTINUATION OR CONTINUATION-IN-  
PART (C-I-P) APPLICATION.

**ALL FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS  
(6 MONTHS FOR DESIGN) PRIOR TO THIS U.S. APPLICATION**

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NOTE: If the application filed more than 12 months from the filing date of this application is a PCT filing forming the basis for this application entering the United States as (1) the national stage, or (2) a continuation, divisional, or continuation-in-part, then also complete ADDED PAGES TO COMBINED DECLARATION AND POWER OF ATTORNEY FOR DIVISIONAL, CONTINUATION OR C-I-P APPLICATION for benefit of the prior U.S. or PCT application(s) under 35 U.S.C. § 120.

**POWER OF ATTORNEY**

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(List name and registration number)*

Brian T. Rivers	41,270
Daniel D. Tagliaferri	P43,178
Robert C. Rolnik	37,995

*(check the following item, if applicable)*

- ☐ Attached as part of this declaration and power of attorney is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

---

SEND CORRESPONDENCE TO  
Nokia Inc.

Attn: Brian T. Rivers, Esq.  
6000 Connection Drive  
Irving, TX 75039

DIRECT TELEPHONE CALLS TO:  
*(Name and telephone number)*

Brian T. Rivers  
(972) 894-4959

---

**DECLARATION**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**SIGNATURE(S)**

NOTE: Carefully indicate the family (or last) name as it should appear on the filing receipt and all other documents.

**Full name of sole or first inventor**

Justin (GIVEN NAME) R (Middle Initial or Name) Beghtol (Family or Last Name)

Inventor's Signature: Justin Beghtol

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**Full name of second joint inventor, if any**

Kenneth (GIVEN NAME) T (Middle Initial or Name) Mar (Family or Last Name)

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**Full name of third joint inventor, if any**

(GIVEN NAME) (Middle Initial or Name) (Family or Last Name)

Inventor's Signature:

Date: Country of Citizenship:

Residence

Post Office Address

[check proper box(es) for any of the following added page(s)  
which form a part of this declaration]

- ☐ Signature for fourth and subsequent joint inventors. *Number of pages added*  
...
- ☐ Signature by administrator(trix), executor(trix) or legal representative for deceased or  
incapacitated inventor. *Number of pages added*  
...
- ☐ Signature for inventor who refuses to sign or cannot be reached by person authorized  
under 37 CFR 1.47. *Number of pages added*  
...
- ☐ Added page for signature by one joint inventor on behalf of deceased inventor(s) where  
legal representative cannot be appointed in time (37 CFR 1.47). *Number of pages added*  
...
- ☐ Added pages to combined declaration and power of attorney for divisional, continuation,  
or continuation-in-part (C-I-P) application.  
☐ Number of pages added  
...
- ☐ Authorization of attorney(s) to accept and follow instructions from representative. *Number  
of pages added*  
...

(If no further pages form a part of this Declaration,  
then end this Declaration with this page and check the following item:)

☒ This declaration ends with this page.